



Self-Driving Cars Will Be Here Sooner Rather Than Later: Start Preparing Your Community for the Revolution Now!

A lot of attention is being paid to ride reservation services like Uber and Lyft. From New York City to San Francisco, from Paris to Beijing, government officials are grappling with the popularity of these new vehicle-for-hire businesses and the challenges that they are bringing to their municipalities. But all of the attention being paid to these services is overshadowing the much bigger change that is just over the horizon: self-driving cars.

Only a few years ago, the prospect of self-driving cars seemed like decades in the offing. But technology has been advancing rapidly, so rapidly, in fact, that self-driving vehicles are currently authorized to be field tested in California, Nevada, Michigan and Florida. Right now, as you read this article, there are autonomous passenger vehicles driving on public roads in California. In fact, while Uber is currently built on a human driver vehicle-for-hire model, the company's long-term goal is a fleet of self-driving vehicles. Self-driving technology is also being applied to commercial vehicles, with major manufacturers developing self-driving semi tractor-trailers.

Many people are skeptical that we will ever have self-driving cars, let alone any time soon. However, the benefits of self-driving vehicles will be tremendous, and, as a result, the pressure not merely to develop the technology but to implement it rapidly will result in the driverless vehicles arriving on our streets and at our doorsteps sooner rather than later. The benefits of self-driving cars include, but are by no means limited to:

- **Saving Lives.** Every year, over 32,000 people die in automobile accidents in the United States,¹ with over 1.2 million people dying in automobile accidents worldwide.² Even more individuals are seriously injured (2.31 million injuries in the United States reported in 2013),³ not to mention the property damage that results from such accidents. The vast majority of those accidents are alcohol-related crashes or the result of driver error, including speeding, running red lights, driver fatigue, distracted driving, and cell phone use. While people are skeptical about the safety of self-driving cars, human error is a much greater threat to the public's safety. A recent report about 14 accidents involving Google's self-driving test vehicles in California raised numerous calls of concern about the technology's safety, that is until it was revealed that all of the accidents were the fault of human drivers in the other vehicles.⁴ Every year that self-driving cars are delayed from being used on public roadways means thousands of lives lost, thousands of people injured, and millions of dollars in property damage that could have been otherwise prevented by self-driving technology.
- **Saving Money.** Perhaps a bigger incentive to implementing self-driving cars, bigger even than the incentive of saving thousands of lives every year, is the potential cost-savings from self-driving vehicles.⁵ Businesses stand to reap hundreds of billions of dollars annually in cost-savings and efficiencies. Transportation companies, whether they be commercial trucking or passenger vehicles-for-hire companies, will achieve enormous cost-savings by not having to pay the salaries and benefits of 3.5 million professional truck drivers.⁶ Moreover, such companies stand to gain from efficiencies of self-driving cars. Whereas humans become fatigued and need to rest, self-driving vehicles will not be limited by such constraints, being able to drive from Los Angeles to New York without having to stop to rest. In addition, individuals may buy fewer cars, saving themselves thousands of dollars per year in car payments.⁷ And owners may also stand to see a substantial reduction in their annu-

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al auto insurance payments for those vehicles that people do buy.⁸ Considering these myriad economic benefits, it is easy to see that the annual financial savings from self-driving vehicles will be in the hundreds of billions annually.

- **Faster Travel Times.** People are constantly making mistakes when driving. Even when those mistakes don't result in an accident, human error, particularly when those errors are multiplied by thousands of drivers during the morning commute for example, results in congestion and traffic jams. Self-driving cars will not make the same mistakes as human vehicle operators. They won't ride the brakes, they won't rubberneck at accidents, and, as a result, traffic congestion will be relieved, resulting in shorter commutes and potentially fewer traffic lanes that have to be constructed, maintained, and plowed.

- **Enable Aging in Place.** Most elderly people would like to age in place, staying in their homes or apartments, living independently. Unfortunately, many elderly people are forced to leave their homes and move in to assisted living facilities or with family members, not because they are unable to live in their own homes and care for themselves, but because they are unable to drive from their homes to the grocery store or the doctor's office or the senior center. Self-driving cars will allow those elderly who want to, to live in their homes even after they can no longer drive.

- **Better Mass Transit.** Some critics are concerned that self-driving cars will actually increase the total number of vehicles on the road and the total vehicles miles driven every year. However, self-driving cars have the potential to increase mass transit ridership. First Mile, Last Mile challenges have long been recognized as a substantial impediment to mass transit use. Getting to and from bus stops and light rail and subway stations often prevent people from regularly using mass transit. Self-driving cars could alleviate that problem while at the same time decreasing mass transit travel time, as self-driving cars could be integrated with mass transit systems to coordinate travel.

Moreover, parking at mass transit stations is a

significant challenge, with mass transit providers and transit stations' host communities struggling to provide adequate parking. Self-driving cars will alleviate the need to provide parking immediately adjacent to transit stations. Rather, transit riders will be able to exit their vehicles at the station entrance and then have their self-driving vehicle travel a short distance to park, or better, yet pickup other individuals in need of transportation. Consequently, self-driving cars may result in an increase in mass transit ridership in large, medium, and small markets.

- **Combating Climate Change.** Self-driving cars have the potential to greatly improve the environment in a myriad of ways. Self-driving cars are likely to be substantially lighter than traditional vehicles, resulting in increased fuel economy. In addition, because self-driving cars will be lighter and capable of driving themselves to recharging stations (Tesla Motors announced in August 2015 that it is developing an automated charging arm for its cars),⁹ self-driving cars will greatly facilitate the use of electric vehicles which are more efficient and produce fewer greenhouse gases than traditional internal combustion engine vehicles. Moreover, self-driving vehicles are likely to simply drive more efficiently than the average human driving vehicle, resulting in better gas mileage. Consequently, the environmental benefits of self-driving cars will be reason for adopting the technology sooner, rather than later. Government officials looking for ways to combat global climate change are likely to see self-driving vehicles as an important, viable tool in achieving their goals.

These are only a few of the substantial benefits of self-driving cars. And while there are undoubtedly many challenges still to overcome before self-driving cars are approved for use by the general public, their potential to save lives and money, to combat climate change, and to generally improve our quality of life means that before people know it, self-driving technology will be on our streets.

What Do Local Government Officials Need to Do?

Overview

The regulation of self-driving cars is predominantly a matter of federal and State concern. Federal regulations will govern the construction of the vehicles, including the establishing of safety standards, while State regulations will govern their operation on public roads as well as issues of liability. Consequently, local governments will not play a role in bringing self-driving vehicles to market.

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Parking and Self-Driving Cars

Perhaps the greatest impact self-driving cars will have is not on the roads, but rather off of the roads. The vast majority of a passenger car's life is spent parked, either at a person's home or at their place of work. Consequently, a substantial percentage of land is spent housing a device, the main purpose of which is to move along roads.

Many parking experts argue that we have too much parking as it is right now, see [The High Cost of Free Parking](#), by Donald Shoup. And many communities across the country and the globe are already experimenting with reducing the amount of on-street parking, tearing down public parking garages, implementing dynamic pricing for parking spaces, and eliminating off-street parking requirements for residential and commercial development. Parking lots and parking spaces are a necessary cost of our car culture. However, any time a parking space is empty, day or night, is an inefficient use of that land.

Self-driving cars will minimize the number of parking spaces that are needed by allowing people to more easily use available parking spaces in a larger area so that excess parking spaces are neither created nor maintained. The reduced demand for parking will come in many forms and have many positive results:

- Single-family homes without garages or with substantially reduced parking footprints;
- An increase in demand for apartments and condominiums;
- The ability to have large retail and commercial complexes with substantially fewer parking spaces;

- Increased demand for mixed use development;
- A substantial reduction in the need for handicapped parking spaces; and
- The replacement of parking spaces with sidewalks and public spaces.

All of these changes will not only reduce construction costs but also create more walkable communities. Consequently, local government officials should begin examining their subdivision and site plan requirements, preparing for the arrival of a self-driving car society. Even the most optimistic proponents of self-driving technology may question whether communities should begin to plan for self-driving technology today. Obviously, even when self-driving technology is introduced to the general public, it will take many years to rotate the stock of existing vehicles out of service, with the average passenger car being over 11 years old.¹⁰ However, real estate development and parking infrastructure lasts not merely years, but decades. As a result, communities should start considering how proposed developments will be impacted by self-driving vehicles and how that property would be redeveloped if the demand and need for parking were greatly reduced or eliminated entirely. In addition, local government officials may want to begin brainstorming how they would repurpose excess parking lots and how they might move parking to the periphery of a community to create healthier, more walkable, more vibrant mixed use development.

Communities that begin considering and discussing how to redesign their communities with self-driving cars in mind will have a competitive advantage and be better prepared and equipped to bring about that community when self-driving technology finally arrives. This is not to argue that there will not need to be additional planning and consideration down the line, but rather that communities that start thinking about and discussing how we will use driverless cars and how driverless cars will impact us, particularly with respect to parking, will be better prepared to meet that challenge when it arrives.

Self-Driving Cars and Public Transit

As previously mentioned, First Mile, Last Mile challenges plague mass transit systems. The inconvenience of getting to and from mass transit stations or stops is a significant reason why people do not use mass transit and has been a substantial barrier to mass transit ridership for commuter lines as well as systems in smaller and medium-density markets. As one article has noted:

It would be easier to get commuters on board with support for public transportation without the dreaded “first- and last-mile problem”: the extra time and hassle commuters face when they’re going from home to a transit station and then from the station at the other end of the trip to a final destination. “The enemy is really the car’s unequalled convenience; commuters need multiple, equally easy choices before they’ll give up the steering wheel,” writes [Kuang]¹¹

While private companies like Uber are looking at creating private fleets of self-driving for-hire-vehicles, self-driving cars will also be a tool for government transit agencies, particularly to address the First Mile, Last Mile challenge.

Public transit agencies could use a self-driving vehicle fleet, whether they be traditional passenger sedans or vans, to address the First Mile, Last Mile problem. As a result, public transit ridership, whether it be via subway, light rail, or bus, is likely to increase substantially as a result of self-driving vehicles making public transit more convenient.

And while the exact arrival date of self-driving technology to public streets remains to be seen, local government officials who are engaged in multi-year, and in some instances, multi-decade transportation planning projects should start considering how self-driving vehicles can be integrated into their transportation plans and infrastructure, and how the private market for self-driving vehicles might decrease or increase the demand for mass transit service. Because public transportation projects require long-range planning, local, regional, and State officials should be considering today how people will be able to use self-driving vehicles to access transit services tomorrow.

Moreover, communities that struggle with parking at commuter rail stations should begin to consider how they can integrate (e.g., dropoff and pickup infrastructure) and incentivize the use of self-driving cars to alleviate parking congestion at their stations.

Impact on Municipal Revenue

Self-driving cars are likely to present local officials with the loss in municipal revenue. Fines resulting from traffic and parking violations are likely to drop significantly as a result of self-driving technology. Demand for on-street parking may substantially decrease as a result of self-driving vehicles. In addition, self-driving vehicles will be programmed so that they do not violate traffic regulations. Consequently, there will be fewer vehicles exceeding the speed limit and running red lights, which will result in fewer fines that are paid into municipal coffers. Luckily, the implementation of self-driving cars is going to be gradual, so municipal officials will have several years and probably decades to plan for this decrease in revenue.

Conclusion

Self-driving technology will change society in ways that we cannot yet imagine. When exactly that technology will arrive at our doorstep remains an unanswered question to be sure; but make no mistake, self-driving vehicles are coming, and the benefits from and the pressure and incentive to be the first to bring that technology to fruition will mean that their arrival will be sooner, rather than later. And when they arrive, their impact will be revolutionary. Communities that have not prepared for their arrival risk being overwhelmed by the myriad ways in which driverless cars will change our lives and impact our communities. Consequently, local officials should rise now to meet the technology, preparing their comprehensive plans and land use regulations to accommodate driverless technology when it arrives.

Endnotes

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